

E0509

CF₄ + H₂O PLASMA ASHING FOR REDUCTION OF
CONTACT/VIA RESISTANCE

5

Abstract of the Disclosure

10 The degradation of deposited low dielectric
constant interlayer dielectrics and gap fill layers,
such as HSQ layers, during formation of contacts/vias is
significantly reduced or prevented by employing a plasma
containing CF₄ + H₂O to remove the photoresist mask and
cleaning the contact/via opening after anisotropic
etching. The CF₄ + H₂O plasma also enables rapid
15 photoresist stripping at a rate of about 10 to about
20KÅ/min. Embodiments include photoresist stripping and
cleaning the contact/via opening with a CF₄ + H₂O plasma
to prevent reduction of the number of Si-H bonds of an
as-deposited HSQ layer below about 70%.

004020"9EE86460